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ABSTRACT

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The Effect of Academic Status on Race-Related Differences in Reading Achievement and Reading Progress

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Abstract

Race-related differences in reading achievement and reading progress were studied in a public elementary school. Two different groups of students were followed over a five year period. No significant racial differences in reading progress were found for those students who stayed within the school for three to four years. The reading achievement differences found were largely accounted for by the differences between test scores of black and white students who were new to the district at the time they were tested. The need to use a longitudinal approach in studies of differences in achievement is discussed.

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Introduction

Across the nation, parents are demanding that school boards ensure equal access to education for all students. They are requesting and receiving results of standardized tests their children have taken and are holding schools accountable for differences in achievement they perceive as due to discriminatory practices.

Frequently, school districts have used cross-sectional techniques (data from one testing period) to attempt to answer questions about differences in achievement. Such an analysis may neglect the possible effect of academic status, i.e., the length of time a student remains in one school. We found this held true when we used a longitudinal approach (repeated measures taken over time) in our study of racial differences between reading achievement scores. Two of our more striking findings were: 1) the reading achievement differences found were largely accounted for by the differences between test scores of black and white students who were new to the district at the time they were tested and that 2) among the students who stayed within the district, there were no significant racial differences in reading gain over a three to four year period.

Bloom (1964) was one of the first educators to suggest the need to consider stability of student's learning over time. He found that after the third grade, a student's learning rate stabilized and that future achievement could be predicted. Such a finding could be alarming, particularly for a black child who might enter a desegregated school with even a small measureable difference in learning rate. According to Bloom, it would be difficult, if not impossible, to compensate for the deficits accumulated over time.

But would those black students who have been in a school for a number of years benefit from this reported stability and consistency of learning? Or, would they fall behind, unable to catch up or keep up?

In an effort to address the previous questions, we accepted an opportunity to study an elementary school which had traditionally been known for its academic excellence. The school norms in reading and math had been reported to be at least one year above the national norm. The statistics released by the district office, however, showed white students consistently scoring higher than the black students. Based on personal observations within the school, we believed that we would find no racial differences in reading progress for those students who remained in the school over a period of time.

Design

Our study was conducted to investigate the effect of race, sex, academic status and socioeconomic status (SES) on the reading achievement and reading progress of two groups of elementary students. Reading achievement was defined as performance (in grade equivalent) as measured on the Stanford Achievement Test (SAT) reading comprehension subtest. Reading progress was defined as a shift in reading achievement from one testing period to another.

The population consisted of 147 students who attended a public elementary school between the years 1973 and 1978. We studied two different groups of students during this five year period. There was a Group A comprised of 73 students who took the SAT in the third (1976) and fifth (1978) grades and a Group B comprised of 74 students who also took the SAT

in the second (1973), third (1975) and fifth (1977) grades. Any student who had repeated a grade or had been assigned to a learning disability classroom was eliminated from the sample.

The students were identified by race (black or nonblack)[1] and sex. To classify students for academic status, a student was identified as continuing if he or she had a complete set of test scores, and as new if there was at least one missing test score. Students were identified as Social Class I or II (where Class I would be high SES status and Class II would be low SES status) using Hollingshead's Two Factor Index of Social Position (Hollingshead, 1957).

In Table 1, the student population of this study is summarized and the percentage distributions of race, sex, SES and academic status for the two groups are given. The ratio of nonblack to black students was approximately 3:1 for Group A and 2:1 for Group B. The students were about equally distributed for the variables sex and SES.

Table 1
A SUMMARY OF THE STUDENT POPULATION

BACKGROUND VARIABLE	GROUP A		GROUP B		
	GRADE 3 1976 (n=61) %	GRADE 5 1978 (n=57) %	GRADE 2 1973 (n=41) %	GRADE 3 1975 (n=68) %	GRADE 5 1977 (n=37) %
RACE					
Black	25	23	34	26	38
Nonblack	75	77	66	74	62
SEX					
Female	43	39	56	47	46
Male	57	61	44	53	54
SES					
High	37	46	46	50	46
Low	63	54	54	50	54
ACADEMIC STATUS					
Continuing	63	77	79	57	78
New	37	23	21	43	22

Before beginning our discussion of the findings, we need to emphasize that only grade equivalent socres were available for students from this school. Because the average student was scoring above the national norm, the statistical significance of any grade equivalent scores reported in this paper could be misinterpreted. There were a number of nonblack students who scored in the higher ranges of the scale (e.g., third grade nonblack students who scored a grade equivalent of 10.5) and black students who scored in comparatively lower ranges. It should not be inferred, however, that all black students were scoring inferiorly because many of them actually were scoring within normal ranges.

Findings

We used cross-sectional data to study reading achievement differences. The reading comprehension scores for the students are summarized in Table 2. Consistent with the district's studies, our first finding was that generally, the average nonblack student scored two years higher than black students at any one testing period. Both the continuing and the new nonblack students scored higher than the continuing or the new black students. These findings were significant in seven of the ten instances. The new nonblack students seemed to be outscoring everyone. For four of the five testing periods, the new nonblack students were scoring higher than any other subgroup studied.

It was during this phase of our analyses that we found three instances in which black and nonblack students were not scoring significantly different. For Group B's continuing students (those who had remained in the school for at least four years), no significant racial differences in reading achievement were found. This finding had previously been obscured by the failure to study the effect of academic status on racial differences in reading achievement.

Table 2
READING COMPREHENSION SCORES BY ACADEMIC STATUS AND RACE
(in grade equivalents)

VARIABLE	GROUP A						GROUP B								
	GRADE 3			GRADE 5			GRADE 2			GRADE 3			GRADE 5		
	x[1]	s.d.[2]	n[3]	x	s.d.	n	x	s.d.	n	x	s.d.	n	x	s.d.	n
CONTINUING															
Nonblack	5.4*	1.8	34	8.3*	2.0	34	3.3	1.0	18	5.4	1.7	18	7.5	1.6	18
Black	3.2	.7	10	6.2	1.2	10	3.1	1.4	11	4.6	1.6	11	6.7	2.2	11
NEW															
Nonblack	4.5*	1.6	12	8.4*	1.8	10	3.6*	1.5	9	6.5*	2.6	36	9.4*	1.6	5
Black	3.5	1.8	5	5.2	2.4	3	2.8	1.1	3	3.7	1.7	7	5.5	2.2	3

[1]mean
[2]standard deviation
[3]number
*significant difference at .05 level

It was our feeling that the students' reading progress should be studied as well as their reading achievement. We wanted to know what was happening to those students who remained in the district. Were there any differences in the reading gain between black and nonblack students? To address this question, a different consideration of the data was required. A consideration that would examine change over time, use a longitudinal approach and thereby, limit the analyses to the continuing students.

When gain scores were computed, we found no significant racial difference in the reading progress for the students in either Group A or Group B. As can be seen in Figure 1, for Group A, the average gain between the third and fifth grades for continuing students was three grade equivalent levels. For Group B, the average gain between third and fifth grades was a little over two grade equivalent levels.

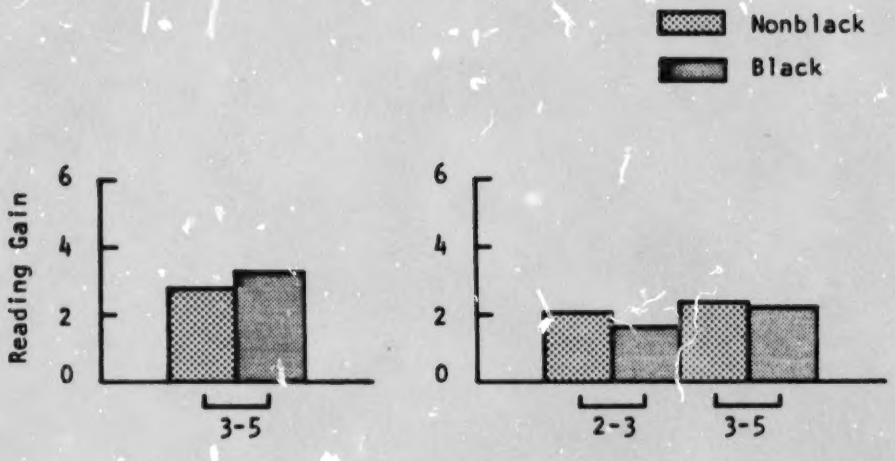

FIGURE 1 A COMPARISON OF THE READING PROGRESS FOR CONTINUING BLACK AND NONBLACK STUDENTS' READING COMPREHENSION SCORES (given in grade equivalents)

Although a significant racial difference in reading achievement was found for Group A, we found no such differences in reading progress. Indeed, the continuing black students (who scored significantly lower than the nonblack students in the third and fifth grades) gained a little more than their nonblack counterparts over the three year period. These findings were even more impressive when one remembered that the average continuing student, black or nonblack, was scoring at least one year above the national norm at any given time.

The other two background variables included in this study--sex and SES--did not offer sufficient explanations for differences in reading achievement or progress. Females were scoring higher than males, but not significantly and the sex variable was dropped from the model after the preliminary analysis. High SES students usually scored higher than the low SES students but either the differences were found to be not significant or the number of students so small for racial/academic subgroups that any conclusions drawn would have been tenuous at best.

Discussion

The difference in reading achievement scores between black and nonblack students in this district's elementary school seemed to be attributable to academic status. For blacks, the continuing students were scoring higher than the new students. And for the nonblacks, the new students were scoring higher than the continuing students. There was no significant difference in the reading progress of the continuing students for either group. In the schematic diagram in Figure 2, this finding is illustrated.

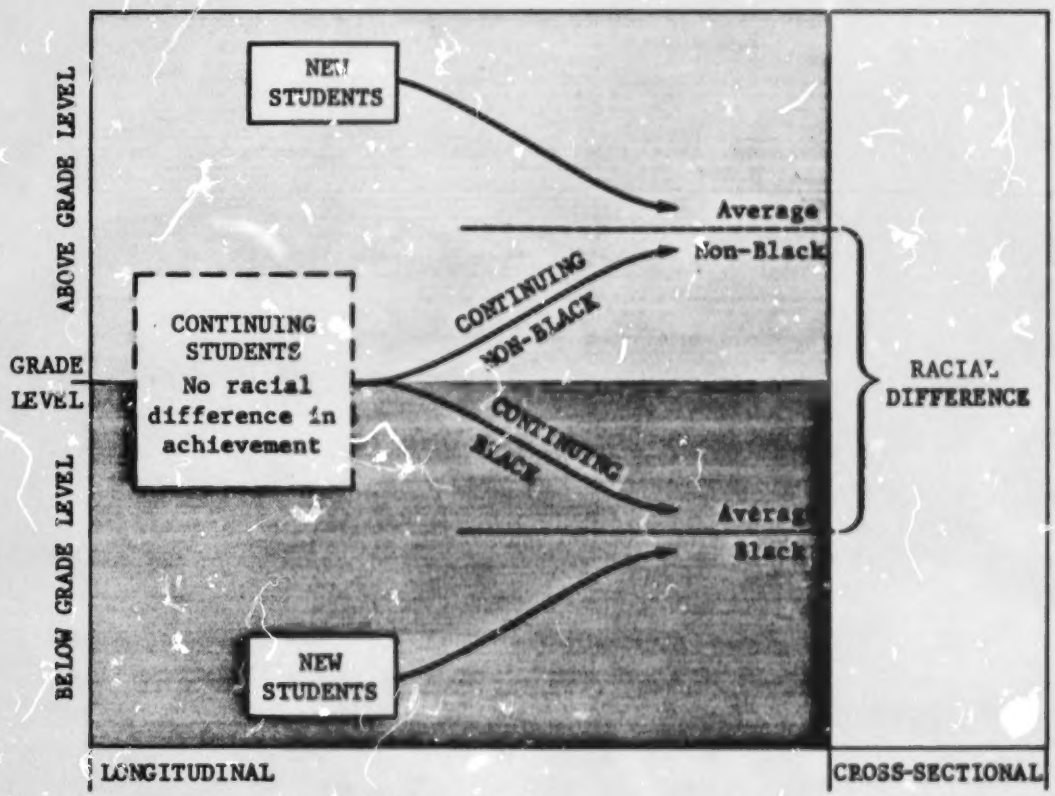

FIGURE 2 THE EFFECT OF ACADEMIC STATUS ON RACIAL DIFFERENCES IN ACHIEVEMENT (longitudinal vs. cross-sectional techniques)

Generally, for those students who remained in the district for at least three years (third through fifth grades), we found no racial difference between averaged achievement scores at any one time period. When new students were included in the analyses, we found the average new nonblack student scoring higher than the average continuing student, and the average new black student scoring lower than the average continuing student.

When the students' reading achievement scores were averaged together and analyzed by race, the achievement differences between races seemed to enlarge dramatically. As is often the case in school districts who conduct cross-sectional studies, the average racial difference is computed with no consideration of the academic status of the students. Indeed, in our study, a racial difference suppressed the effect of academic status and left an inaccurate conception of students' achievement.

The findings of this study raised as many new questions as it answered old ones. Why the new nonblack students were scoring so high on the SAT remains a mystery. The superintendent of the school district speculated the new nonblack students were products of recently single-parent households whose fathers held high occupational and educational statuses. This explanation, however, does not answer why these students were moving to this particular community. Also unanswered is why the new black students were scoring low on the SAT tests.

We have questions about the continuing students also. It is not known whether continuing black and nonblack students were entering the school at the same level of reading (early entrance data was unavailable). Therefore, any conclusions about why there was no difference in reading progress or achievement are severely curtailed.

In the elementary school we studied, the racial differences found between new and continuing students may have been due to the small number of new black students who entered the school. Since the number of new black students was appreciably smaller than the new nonblack students, any sizeable increase in the new nonblack student population affected comparisons. This was particularly evident in Group B, grade three, where 77% of the new students were nonblack and the average new nonblack student scored higher (6.5) than either the school (5.6) or national (3.6) norm.

Conclusions

Perhaps, our most important finding was identifying a public elementary school which had been successful in teaching students across racial groups. The average student, black or white, who remained in this school,at least through fifth grade,scored at or above grade level on standardized reading tests. We found no race-, sex-, or SES-related differences in the reading achievement or reading progress for these continuing students.

As for Bloom's findings that learning rate stabilizes after the third grade, the trend from our data did seem to indicate that for reading, between third and fifth grades, the continuing students were learning at the same rate. For Group B, between second and third grade, there was a noticeable but not significant racial difference in the learning gain (.4 grade equivalent). It might be implied that after the third grade, these black students were unable to make up any differences between themselves and their fellow white students. Because there was data for only one second grade group (n=27 of which 11 were black) the previous statement can be inferred only.

We believe that educators are sometimes too hasty in singling out factors for differences in achievement test scores. All too often, racial and socioeconomic differences are designated as the culprits. As can be seen in this study, the failure to consider academic status and the use of grade equivalent scores are two other possible "culprits" in achievement differences. Schools are ripe for longitudinal studies which include the consideration of academic status and race. Those findings should offer fresh perspectives for policy making decisions.

Footnote

[1]Asians, Hispanics and other ethnic minorities comprised a small percentage (less than 5%) of the total student population in this school. Since this study was primarily concerned with comparisons between black and white students, all other racial groups than black were classified with white to form the subgroup, "nonblack".

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